

**Bharat Heavy Electricals Limited**

(A Government of India Undertaking)

Electronics Division

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Tender document for supply of SMT Rework Station**R F Q Number : TRSM900009**Tender Qty : **One**

Tender Due Date and Time : 15.02.2008 13.00 Hrs

Tender Opening Date and Time : 15.02.2008 13.30 Hrs

Place of opening of Tender : SA – MM Conference hall

Scope:

Supply, installation and commissioning of SMT Rework Station

1. Two part Bid - Tender shall be submitted in two parts :

- a. Part I – Techno commercial bid without prices.
- b. Part II – Price bid

2. Earnest Money Deposit : EMD of Rs 40,000/- (rupees forty thousand only) shall be submitted in the form of DD along with the Techno-commercial bid in a separate sealed cover in favor of “**Bharat Heavy Electricals Limited**”. EMD in the form of DD / Pay order only is acceptable & any other form is not acceptable and the bid is liable for rejection. EMD amount doesn't carry any interest. The same will be converted as Security Deposit for the successful bidders and for unsuccessful bidders the same will be refunded after finalization of the order. For successful bidders EMD will be refunded after submission of PBG.

3. Delivery Period: Equipment shall be delivered, within 4 months from the date of placement of technically & commercially clear purchase order.

4.0 Warrantee period : Equipment shall have a comprehensive warrantee of 12 months from the date of installation / acceptance and accordingly PBG shall be for 12 months from date of acceptance.

5. Terms and conditions:

1. All the Bidders shall meet the **pre-qualification criteria** and Comply with **Technical Specification** mentioned in this specific tender.
2. Indian Bidders are required to comply with the **general terms and conditions** as per **SA – 01 (Annexure –I)**
3. Foreign Bidders are required to comply with the **general terms and conditions** as per **SA – 02. (Annexure –II)**

Pre qualification criteria

1. The vendor shall be an Original Equipment Manufacturer (OEM)
 - a. Based in India
 - b. Foreign OEM with Authorized Indian dealer(s) / representative(s) for sales & service. The authorization letter for the dealer/ representative shall be provided.
 - c. Offer can be submitted by the OEM or their authorized dealers in India along with an authorization letter. However Purchase Order will be placed on the lowest technically acceptable bidder on the OEM only.
 - d. If the offer is from an authorized representative in India , the Indian representative cannot quote for the same equipment from 2 or more different OEM's
2. The offer shall be only for new equipment and not for any refurbished / used equipment.
3. All the parts used in the machine shall also be new and not used / refurbished ones. A declaration to the above effect to be furnished.
4. The vendor should have already supplied and installed 5 nos. of similar machines in India and operating satisfactorily for at least one year during the last three years. The details of the customers with contact details, machines installed, date of installations etc. to be provided.
5. The vendor shall be in a position to provide service and spares support for the installations in India.
6. The vendor or their authorized service representatives should have trained engineers in India for commissioning & service for the offered equipment.
7. The vendor shall be in a position to undertake AMC for the equipment with BHEL after the expiry of the warranty/ guarantee period either directly or through a service representative. The vendor should have successfully completed AMC for similar machines for at least one year in India and necessary proof to be furnished.
8. The vendor shall arrange for a demonstration of the machine or a similar system operating in India, if required by BHEL.
9. The vendor shall furnish a comprehensive warranty for at least 12 months from the date of commissioning or 18 months from the date of delivery, whichever is early.
10. The vendor shall guarantee the performance of the equipment for at least 12 months from the date of commissioning.

NOTE:

1. Pre qualification will be carried out based on the details furnished by the vendor / feedback from their customers / inspection of the company / product if required by BHEL and at its sole discretion.
2. The Pre qualification criteria are mandatory requirements and the technical bids will be evaluated only when the Pre Qualification criteria are met.

**Ref : Pspec - PS-202-SMT 705****A.)Scope:**

Supply, Installation & Commissioning of the Rework Station for SMT line as per the following specifications.

B.)Technical Specifications:

The offer shall be corresponding to the parameters under the specifications below or better. Pointwise compliance to the following specification is required

SI No	PARAMETER	REQUIREMENT
1	BOARD HANDLING CAPACITY	
1.1	MINIMUM SIZE	50mm X 50mm
1.2	MAXIMUM SIZE	350mmX400mm
1.3	THICKNESS	0.5 TO 4 mm
1.4	SUPPORT	Supported from Underside in addition to rails
1.5	CLEARANCE FOR UNDER SIDE COMPONENTS	Minimum 15 mm
1.6	FIDUCIALS	Minimum 2 nos of standard Fiducials
1.7	Board holder	Fully adjustable / universal PCB holding fixture.
2	COMPONENT HANDLING CAPACITY	
2.1	Minimum Size of CHIP	0201 (20 mil x10 mil)
2.2	MAXIMUM SIZE OF COMPONENT	Atleast 50mm X 50mm
2.3	MAXIMUM COMPONENT HEIGHT	25 mm
2.4	PACKAGES	Chip, MELF, mini MELF, SOT, DPAK, SOIC, PLCC, FPGA QFP,BGA, CSP , micro BGA etc.
2.5	COMPONENT LEADS	J TYPE , GULL WING
3	COMPONENET PLACEMENT	
3.1	PLACEMENT ACCURACY	25 microns
3.2	THETA ROTATION RESOLUTION	0.1 DEG
3.3	LEAD PITCH CAPABILITY	12 MIL
3.4	PLACEMENT PRESSURE	Adjustable
4	REFLOW SYSTEM	
4.1	TYPE OF HEATER	FORCED AIR CONVECTION
4.2	STAGES	A)PREHEATER B)REFLOW HEATER
4.3	Temperature range	Upto 500 deg C
4.4	Temperature Control	Microprocessor based control with multiple thermocouples

4.5	Thermal profiling.	Profiler with minimum memory for 50 profiles.
4.6	Heater reach	Upto 250 mm
5 LEAD FREE COMPATIBILITY		
5.1	Component Packaging	Suitable for all type of lead free SMD packaging rework e.g. Chip, MELF, mini MELF, SOT, DPAK, SOIC, PLCC, FPGA QFP,BGA, CSP , micro BGA etc.
5.2	Wattage of heaters	PREHEATER-Wattage suitable for lead-free SMD packages rework (as explained above) REFLOW HEATER- Wattage suitable for lead-free SMD packages rework (as explained above)
6 NOZZLES, stencils		
6.1	PICK UP NOZZLES AND TIPS	Suitable optimal set of vacuum nozzles and tips for handling the components as per sl.no 2.1 & 2.5.
6.2	Stencils	Rework stencils for the above packages to be offered with individual price break up.
7 VISION SYSTEM		
7.1	CCD Camera	Color camera with atleast 40X magnification
7.2	Splitters	a) Image Splitter for simultaneous 4 side viewing b) Beam splitter for simultaneous viewing of the component bottom and pattern on the PCB
7.3	Monitor	17" TFT Monitor (Minimum)
8 SOFTWARE & SYSTEM		
8.1	OPERATING SYSTEM	Microsoft Windows based
8.2	SOFTWARE FEATURES	The software shall support the following. a) Real time process graphing b) Data logging c) Profile modifications & storage d) Component library e) Profile library
8.3	SYSTEM	System with CD drive, network card Ethernet 10/100 mbps, USB, Serial port to be provided.
9 POWER		
9.1	POWER INPUT	230V +/-10%, 50Hz Single Phase (or) 415V +/-10%, 50Hz, Three Phase.

10	AIR SUPPLY REQUIREMENT	Less than 6 bar
11	WORKING ENVIRONMENT	
11.1	HUMIDITY	RH 10 % TO 90 %
11.2	TEMPERATURE RANGE	4 TO 45 DEG C
12	SAFETY	The equipment shall have built-in safety interlocks and alarm system.

C. Details to be furnished along with the technical offer

1. Equipment parameters with brief explanation of features.
2. If more than one model is quoted, separate offer with complete technical details shall be submitted.
3. Additional Accessories, which will enhance the performance of the system, shall be quoted separately with price break up.
4. A clauses wise deviation, if any, has to be brought out clearly. If there are no deviations, the vendor has to positively certify clause-wise compliance to the specifications.
5. The complete technical information and catalogue shall be given.
6. Authorisation letter from the OEM to be provided, if applicable.
7. Details of authorized service agents in India to be furnished
8. List of recommended spares for maintenance purposes to be indicated
9. Reference List of customers in India & worldwide to be furnished.

D. Documents to be furnished along with Equipment

1. Operation, Maintenance, Service & spare parts manual have to be supplied along with the equipment
2. Pre-shipment Calibration certificates, if any shall be furnished. The subsequent calibration process and periodicity shall be furnished along with the authorized calibration agencies.

E. General Terms:

1. Supplier shall guarantee for one year of trouble free performance of the equipment from date of installation.
2. The equipment and accessories shall carry comprehensive warranty of one year from the date of installation including spares and service.
3. Training of the operators to be provided at BHEL / EDN for the operations and maintenance of the machine.
4. All commissioning / service requirements such as power, compressed air, water, lubricants, coolants, any civil requirements like special foundation arrangements etc. have to be listed and intimated well in advance.
5. The equipment shall be installed & commissioned at BHEL / EDN by the vendor.
6. The vendor shall coordinate with other vendors of related equipment of SMT line, which will be installed at BHEL-EDN, during installation & commissioning.



7. Training shall be provided for operation & maintenance for BHEL personnel. The training details to be furnished.
8. Initial Calibration certificates shall be furnished. The subsequent calibration schedules, process and periodicity shall be furnished alongwith the authorised calibration agencies , if any..
9. The software upgrades during the warranty / guarantee period shall be provided free of cost
10. Terms of Annual maintenance contract to be indicated.